

AERO DESIGN LTD.
2013 – 39th Avenue NE
Calgary, Alberta, T2E 6R7

FMS792.90

BELL 212, 412, 205A-1, 205B

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT

for the

INSTALLATION of the CARGO DEPLOYMENT ARM

Limited Supplemental Type Certificate No. C-LSH08-157/D

Sections 1, 2, 3 and 4 of this document comprise the Transport Canada Approved sections of this Flight Manual Supplement. Compliance with Section 1, Limitations, is mandatory.

Section 5 and any subsequent sections if present are Unapproved and are provided for information only.

The information and data contained in this Flight Manual Supplement supersede or supplement that contained in the basic Approved Flight Manual for the 212 and 205A-1 when fitted with the Rappel Mount Provision. For limitations, procedures and performance not listed in this Flight Manual Supplement, refer to the Approved Flight Manual and other approved Flight Manual Supplements.



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MAY 07 2008

1 LIMITATIONS

1-3 TYPES OF OPERATIONS:

The Cargo Deployment Arm is an approved provision for non-human, cargo deployment only.

Cargo Deployment operations permitted during VFR conditions only.

1-4 FLIGHT CREW:

Cargo Deployment Operations:

A second crewman to operate the cargo deployment arm is required if cargo deployment operations are to be conducted. The crewman must have full access of the cabin to perform duties as a Cargo Deployment Operations Load Master.

All cargo deployment crew members must wear a protective helmet for moving about in the aircraft.

Carriage of Passengers during non-cargo deployment flights:

All passengers must remain seated with the seatbelt fastened during flight.

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1-5 CONFIGURATION:

The aircraft may be equipped with:

A Left Hand Cargo Deployment Arm,

A Right Hand Cargo Deployment Arm, or

Both Left Hand and Right Hand Cargo Deployment Arm.

The sideward facing seats on the left hand side must be removed if the Cargo Deployment Arm is installed on the left hand side of the helicopter.

The sideward facing seats on the right hand side must be removed if the Cargo Deployment Arm is installed on the right hand side of the helicopter.

1-5-A REQUIRED EQUIPMENT FOR CARGO DEPLOYMENT OPERATIONS:

The aircraft must have a functioning communications system between the pilot and the load master.

A hook knife must be;

- i. Carried by the Cargo Deployment Operations Load Master for immediate access, or
- ii. Fixed within the helicopter interior, readily accessible to the Cargo Deployment Operations Load Master, as detail by the operating agency's operating procedures.

1-7 AIRSPEED

Cargo Deployment Operations: Hover with lateral translation at a speed not to exceed 10 knots is permitted for positioning only.

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1-20 MARKINGS AND PLACARDS

Placards 79201-11 and 79201-12 to be in clear view of the pilot

**AIRCRAFT MUST BE IN HOVER FOR
CARGO DEPLOYMENT OPERATIONS**

Placard 79201-11

**CARGO DEPLOYMENT OPERATIONS
DURING VFR CONDITIONS ONLY**

Placard 79201-12

Placard 79201-13 to be attached to Cargo Deployment Arm in clear view of the load master.

**MAXIMUM CARGO DEPLOYMENT ARM
CAPACITY
250 LB (113.3 KG)**

Placard 79201-13

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2 NORMAL PROCEDURES

2-1 INTRODUCTION:

The Cargo Deployment Arm is approved for non-human cargo deployment operations only. A cargo deployment operation is the continuous controlled decent of cargo from the aircraft to the ground. The cargo is fixed to a suspension line. The suspension line passes through a decent control device, such as a sky-genie or figure-of-eight. The decent of the cargo is controlled by the load master holding the "loose-end" of the suspension line within the cabin of the helicopter.

This section contains instructions for conducting cargo deployment operations.

**WARNING**

INTENTIONALLY STOPPING THE DECENT PRIOR TO REACHING THE GROUND IS NOT PERMITTED

**WARNING**

USING THE CARGO DEPLOYMENT ARM FOR EXTRACTIONS IS NOT PERMITTED.

**WARNING**

USING THE CARGO DEPLOYMENT ARM FOR HUMAN EXTERNAL CARGO OPERATIONS IS NOT PERMITTED.

MAY 07 2008

2-3 PREFLIGHT CHECK:

Visually inspect the Cargo Deployment Arm for loose fasteners and wear.

Ensure the roof and floor fittings are properly in position and locked.

2-9 IN FLIGHT OPERATIONS – CARGO DEPLOYMENT OPERATIONS:

Ensure communication between the pilot and the load master is established and maintained.

WARNING

**STOP CARGO DEPLOYMENT
OPERATIONS IF COMMUNICATION
BETWEEN THE PILOT AND THE LOAD
MASTER HAS FAILED**

Cargo deployment operations may commence only on the pilot's command

Cargo deployment operations must stop on the pilot's command.

The aircraft must be in hover flight during cargo deployment operations

The cargo deployment line must be dropped to the ground when the cargo deployment operation is complete. Do not retract the cargo deployment line into the aircraft.

The load master must observe the cargo deployment operation and communicate to the pilot the status of the cargo deployment operation continuously.

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3 EMERGENCY PROCEDURES

Suspension line jettisonability lies within the direct control of the load master under the pilots command. Clear communication between the pilot and the load master must be maintained during cargo deployment operations.

SUSPENSION LINE JETTISON PROCEDURE

On the command of the pilot the load master must jettison the suspension line by:

- i. Releasing the suspension line, or
- ii. Cutting the line with the hook knife provided for the Cargo Deployment Load Master.

WARNING

**THE SUSPENSION LINE MUST BE CUT
AS SHORT AS PRACTICAL.**

**ANY LOOSE LINE REMAINING MUST BE
IMMEDIATELY SECURED TO PREVENT
ANY POSSIBLE ENTANGLEMENT WITH
THE HELICOPTER ROTOR SYSTEM.**

4 PERFORMANCE

No change from basic Rotorcraft Flight Manual.

MAY 07 2008

5 WEIGHT AND BALANCE

English Units		Longitudinal		Lateral	
Item	Weight (Lb)	Arm (in)	Moment (in*Lb)	Arm (in)	Moment (in*Lb)
Left Hand Cargo Deployment Arm (If Installed)	4.6	135.3	622.4	-39.5	-181.7
Right Hand Cargo Deployment Arm (If Installed)	4.6	135.3	622.4	39.5	181.7

Metric Units		Longitudinal		Lateral	
Item	Weight (kg)	Arm (m)	Moment (kg*m)	Arm (m)	Moment (kg*m)
Left Hand Cargo Deployment Arm (If Installed)	2.1	3.4	7.1	-1.0	-2.1
Right Hand Cargo Deployment Arm (If Installed)	2.1	3.4	7.1	1.0	2.1

Note: Cargo suspended from the Cargo Deployment Arm is located at Fuselage Station 131in and Right Butt Line 57.5in (for Right Hand Cargo Deployment Arm) and/or Left Butt Line -57.5in (for Left Hand Cargo Deployment Arm).

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MAY 07 2008

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